SEGA

Virtua Fighter 2

SERVICE MANUAL

SEGA ENTERPRISES, LTD.

BASEMENT ARCADE

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NOTE: Descriptions in this manual are subject to change without prior notice.

Introduction

SEGA ENTERPRISES, LTD., supported by its high electronic technology of LSIs, microprocessors, etc. and a wealth of experience, has for more than 30 years been supplying various innovative and popular game machines to the world market. This Owner's Manual is intended to provide detailed descriptions together with all the necessary information covering the general operation of electronic assemblies, electromechanicals, servicing control, spare parts, etc., as regards VIRTUA FIGHTER 2, a new SEGA product.

This manual is intended for those who have knowledge of electricity and technical expertise especially in ICs, CRTs, microprocessors, etc. Carefully read this manual to acquire sufficient knowledge before working on the machine. Should there be a malfunction, non-technical personnel should under no circumstances touch the interior system. Should such a case arise, contact our Main Office or the closest branch office listed as follows:

SEGA ENTERPRISES, INC. (U.S.A.)
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45133 Industrial Drive
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Phone: 415-802-1750
Fax: 415-802-1754

Game Handling Precautions

When installing or inspecting the machine, be very careful of the following points and pay attention to ensure that the player can enjoy the game safely.

* ✳ Be sure to turn the power OFF before working on the machine.

* ✳ To insert or pull out the plug quickly is dangerous.

* ✳ It is necessary to make sure that the power cord or the grounding wire is not exposed on the road, etc. in a manner so as to be dangerous. Make sure that grounding connections are made safely at the position where so specified.

* ✳ Do not use any fuse that does not meet specified rating.

* ✳ Make complete connections for the IC board and other connectors. Insufficient insertion is very dangerous.

* ✳ The operating (ambient) temperature range is from 5 °C to 40 °C.

* ✳ When cleaning the CRT surfaces, use a soft, dry cloth. Do not apply chemicals such as thinner, benzine, etc.

Also, for the IC board circuit inspections, only the logic tester is allowed.

After confirming that there are no irregularities, turn the power ON.

Prevention of Counterfeiting and Conversion

✳ LABELING

To prevent counterfeits and conversions, the following labels are put on all the SEGA products. When handling such goods, be sure to confirm the labels. They are used to prevent illegal acts such as the unauthorized copying of the products and the printed circuit boards thereof or carrying on business by manufacturing similar merchandise or by converting, selling or using such products or printed circuit boards.

✳ ORIGINAL SEAL

The following seal is put on the machines manufactured by SEGA.
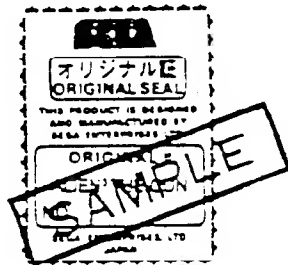
✳ LICENSE SEAL

The following seal is put on all SEGA kits, such as the printed circuit boards.

✳ COPYRIGHT NOTICE

This SEGA product has the copyright notice as follows:

© SEGA 1994

This signifies that this work was disclosed in 1994 and is the property of SEGA ENTERPRISES, LTD.

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Precautions Concerning Installation Location

The Virtua Fighter 2 is an indoor game machine. **DO NOT INSTALL IT OUTSIDE UNDER ANY CIRCUMSTANCES.** Even indoors, avoid installing in places mentioned below so as to ensure proper usage:
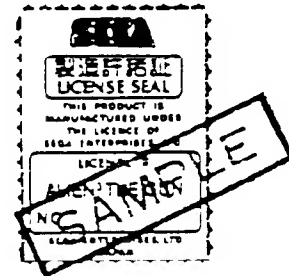
- ✸ Places subject to rain or water leakage, or condensation due to humidity.

- ✸ In the proximity of an indoor swimming pool and/or shower.

- ✸ Places subject to direct sunlight.

- ✸ Places subject to heat sources from heating units, etc., or hot air.

- ✸ Vicinity of anti-disaster facilities such as fire exits and fire extinguishers.

- ✸ Places subject to any type of violent impact.

- ✸ Dusty places.

INSTALLATION PRECAUTIONS

- ✸ Do not insert more than one electrical plug into the power plug socket.

- ✸ The per unit standard voltage/amperage is 100–120V/5A.

- ✸ If an extension cord is to be used, use a cord of 5A or higher rating.

ELECTRIC CURRENT CONSUMPTION

- ✸ 2.1A, 250 Watts, 120VAC, 60 Hz

Installation Precautions & Transportation of Machine

ADJUSTING LEG ADJUSTERS

The Virtua Fighter 2 has 2 Casters and 4 Leg Adjusters. Cause the Leg Adjusters to come into contact with the floor, and secure the machine in place. Make adjustments in the height of the Leg Adjusters in a manner so that the Casters will be raised approximately 5mm from the floor level, and secure the Adjusters' height by fastening the Nuts. (If the gap is less than 5mm, the machine may move while the game is being played and become dangerous.)

SIDE VIEW

Caster
(PN 999-0209)

Approx. 5mm

Leg Adjustor
(PN 999-0210)

BOTTOM VIEW

Leg Levers
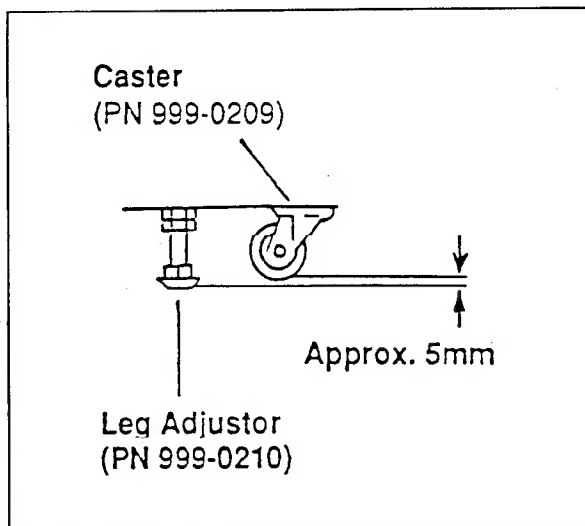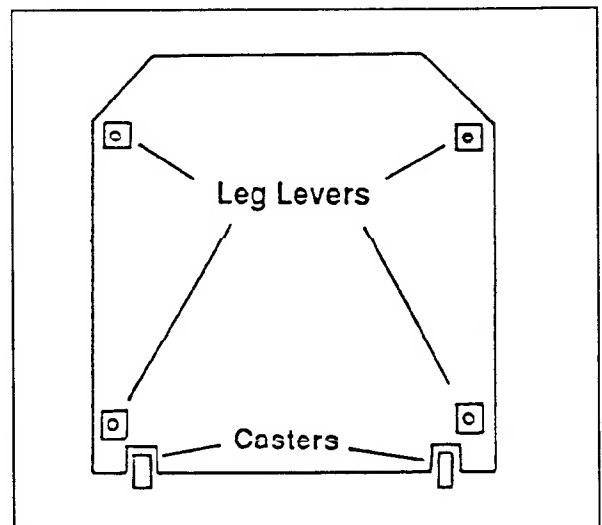
Casters

WHEN TRANSPORTING THE MACHINE

When moving the Cabinet, retract the Leg Adjusters to cause the Casters to make contact with the floor. Also, in the case where there are differences in floor levels, transport the Cabinet by holding the catches on both sides of the Cabinet and lifting it up.

Model Sur-007-02

DEPTH	WIDTH	HEIGHT	WEIGHT
41"	30"	75"	Approx 404 lbs.

Bill Board
(PN 999-0359)

Marquee Header Glass
(PN 999-0353)

Monitor Glass
(PN 999-0358)

26" Nanao Monitor
(2001-5187-01)

Left Side Decal
(PN 999-0354)

Right Side Decal
(PN 999-0355)

Control Panel

Control Panel Overlay
(PN 999-0356)
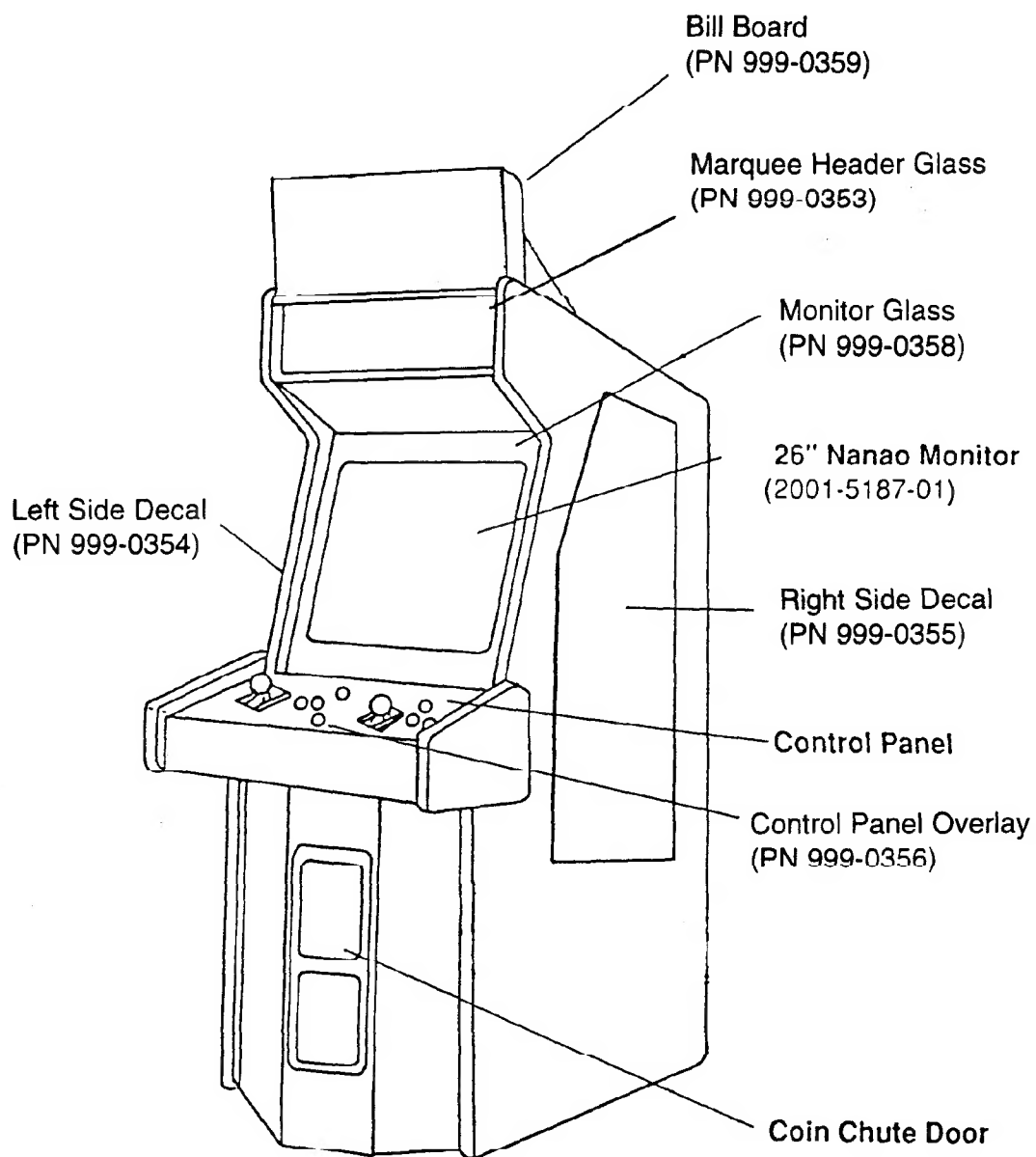
Coin Chute Door

Switch Unit

Open the coin chute door and the switch unit shown will appear.
The functioning of each SW is as follows:

1   SERVICE SWITCH (Service Button) gives credit without registering on the coin meter.

2   TEST SWITCH for the handling of the test button, refer to the following pages.

3   SOUND VOLUME adjusts the sound volume of the Speaker.

4   COIN METER registers coins accepted for play.

5   DEGAUSS SWITCH corrects color impurity.
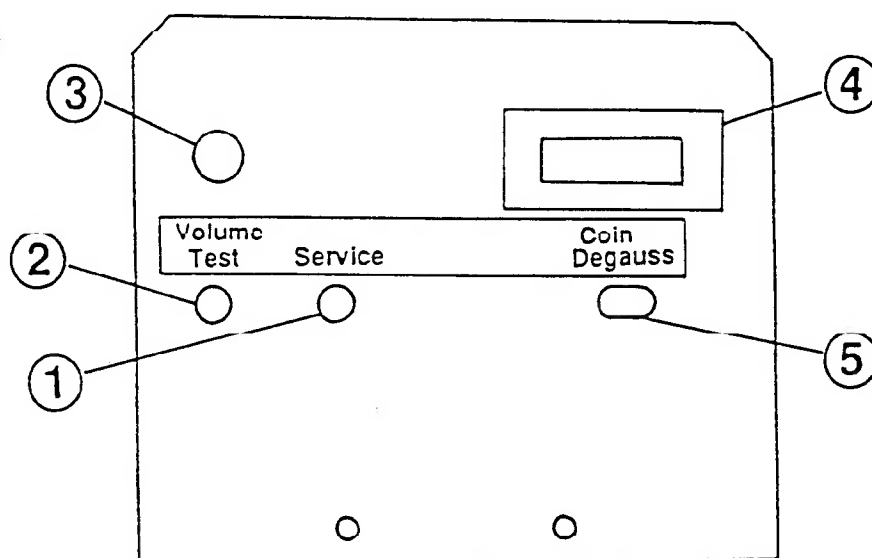
Fluorescent Lamp Replacement

1   Remove (6) #8 Screws holding Billboard to Cabinet. Remove Billboard.

2   Remove (4) 8 x 1/2" Panhead Screws holding Top Header Retainer Bracket. Remove Retainer Bracket.

3   Remove (4) 8 x 1/2" Panhead Screws holding Bottom Header Retainer Bracket. Remove Retainer Bracket.

4   Carefully remove Header Marquee Glass.

5   Replace 24" Lamp or Starter as needed.

6   Replace Glass, Top & Bottom Retainer Bracket with the 8 Screws that were previously removed.
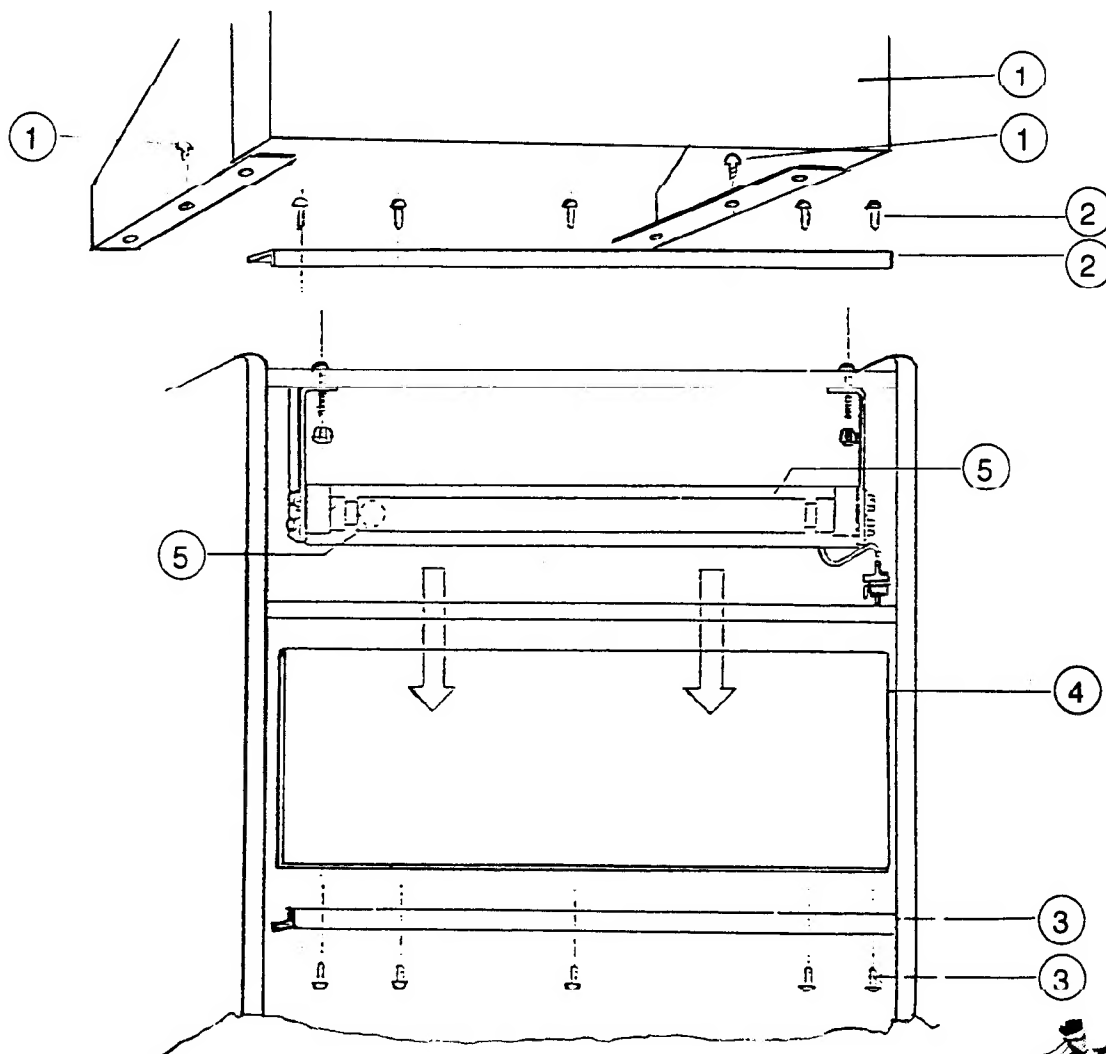
Control Panel/Monitor Adjustment

To unlatch Control Panel, open Coin Door, reach through Coin Door and lift Clamp Tab up. The Latches are located at the upper left and right corners of the Control Shelf. Once the Latches are opened, the Control Panel can be tilted down and the Monitor Glass removed. Remove the Monitor Bezel to gain access to gain access to the Monitor Controls.

To Open
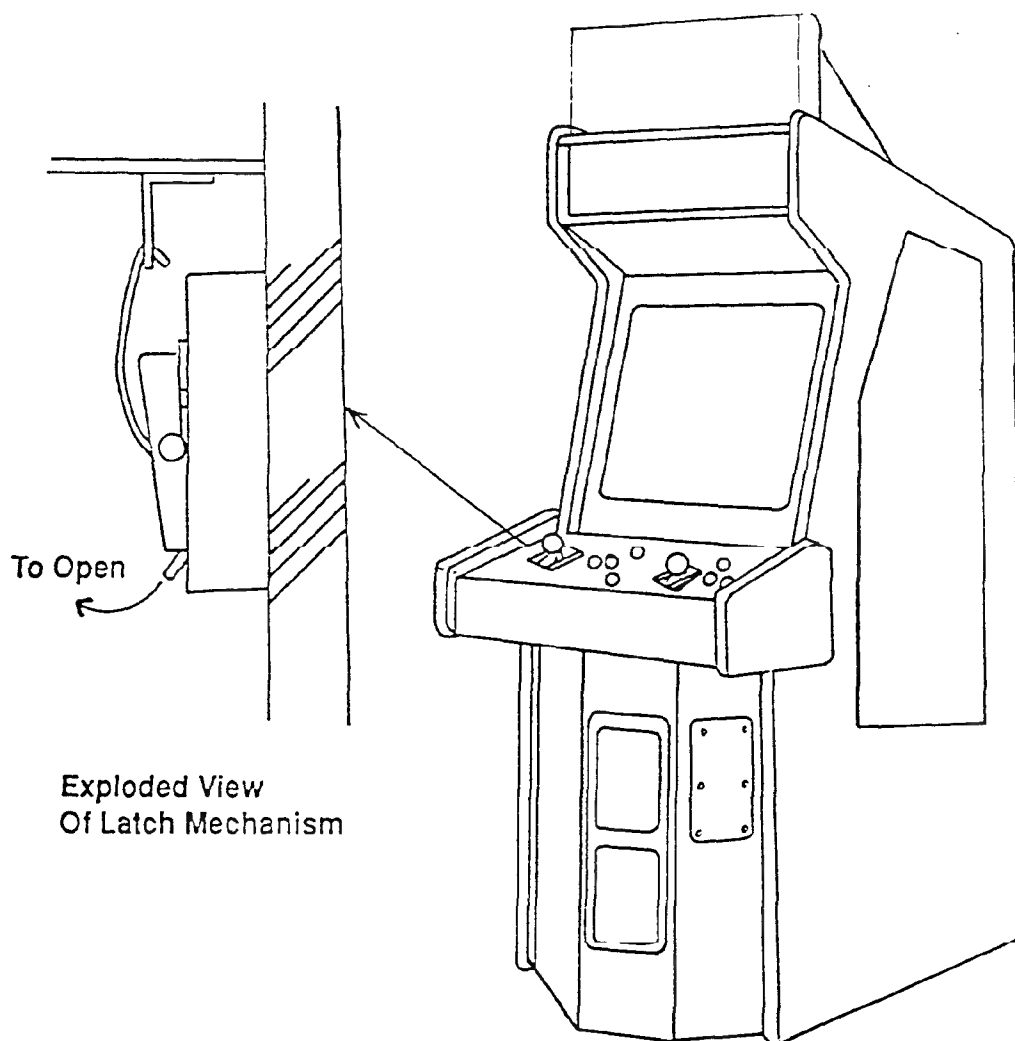
Exploded View
Of Latch Mechanism

26" Monitor

Remove the Control Panel, Monitor Glass and Bezel to make the monitor adjustments.

* ✹ V. POSI (Vertical Position Control) adjusts the vertical display position of the image.

* ✹ V. HOLD (Vertical Synchronization Control) adjusts the image running from left to right.

* ✹ V. SIZE (Vertical Size Control) adjusts the length of the screen.

* ✹ H. PHASE (Horizontal Position Control) adjusts the horizontal display position of the image.

* ✹ H. HOLD (Horizontal Synchronization Control) adjusts the image running from left to right.

* ✹ H. SIZE (Horizontal Size Control) adjusts the width of the screen. For adjustments, utilize the Alignment Screwdriver.

* ✹ BRIGHT (Brightness Control)

* ✹ B. GAIN   ✹ G. GAIN   ✹ R. GAIN
  Adjusts colors (Ordinarily, B.C.R. BIAS should not be touched.)

* ✹ FOCUS (Focus Control)

* ✹ SCREEN (Focus Control)
  (Ordinarily, SCREEN should not be touched.)

MAIN BOARD

V. LIN

V. POSITION
V. HOLD
V. SIZE
H. HOLD
H. PHASE
H. POSITION
H. SIZE
BRIGHT
B. BIAS
B. GAIN
G. BIAS
G. GAIN
R. BIAS
R. GAIN

FOCUS (UPPER)
SCREEN (LOWER)
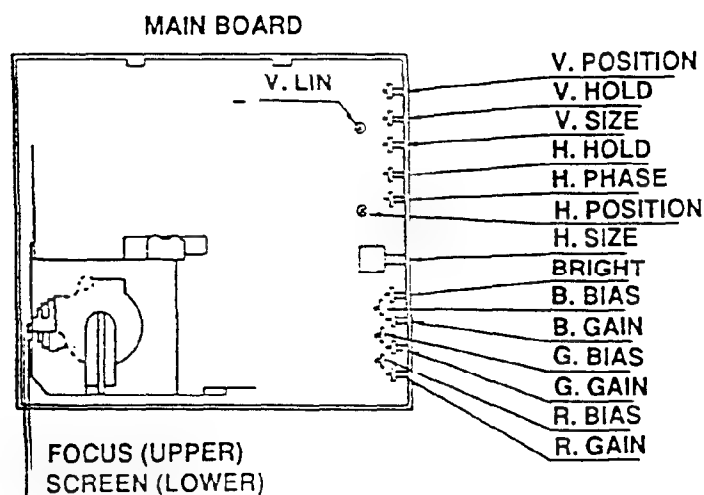
Printed Circuit Board Handling Precautions

✹ When installing and removing the IC Board, make sure that the cabinet's Main Power is OFF

✹ Foreign matter, including dust on the IC Board, may cause malfunctioning (short circuit, combustion, etc., due to the Board's generation of heat) to occur. Therefore, keep the IC Board surfaces always clean.

✹ Completely perform the connections of the IC Board's and other item's Connectors. Insufficient connector insertion may cause the IC Board to be damaged. Therefore, pay careful attention to this point. Also, for the IC Board circuit inspection, only the usage of logic testers is permitted.

✹ The Model-2A P.C.B., when used without the Shield Case, may have a radio wave fault. Therefore, be sure to utilize the Ancillary Shield Case. Should any problem arise when the above-mentioned Shield Case is not utilized, SEGA will not be held responsible whatsoever.

✹ The contents of the product herein described are subject to change without notice.

✹ The DIP Switches on the I/O Board and Sound Board are all set to OFF at the time of shipment. Do not change the setting without good reason.

Test Mode

This mainly checks if the operation of the game BD is accurate, makes monitor color adjustments, and allows for COIN ASSIGNMENTS/GAME ASSIGNMENTS setting adjustments.

Selection of TEST ITEMS

1) Push the TEST SW to cause the following test item menu to appear:

```
                        TEST MENU

                        MEMORY TEST
                        INPUT TEST
                        SOUND TEST
                        DISPLAY TEST
                        GAME ASSIGNMENT
                        COIN ASSIGNMENT
                        BOOKKEEPING
                        BACKUP RAM CLEAR
                        TGP TEST
                        ALL INITIALIZE
            →           EXIT

                SELECT BY SERVICE BUTTON
                AND PUSH TEST BUTTON
```
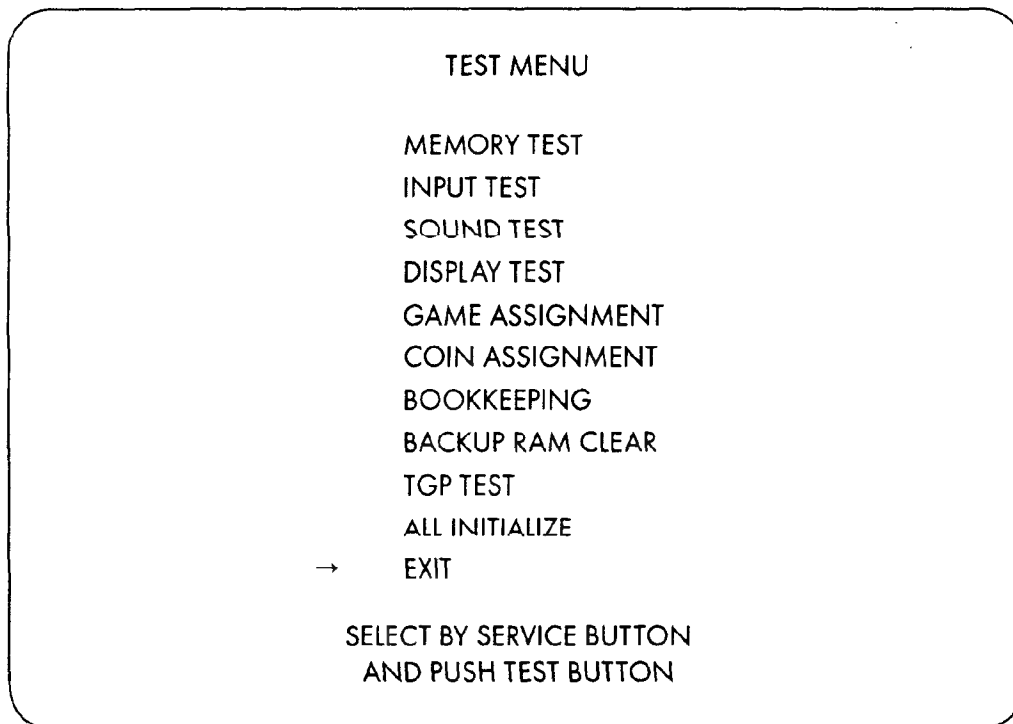
2) By pushing the SERVICE SW, bring the arrow mark "→" to the desired item and press the test button.

3) When the test has been completed, bring "→" to EXIT and push the TEST button.

1 MEMORY TEST

Check the PCB's memory ICs.
When the IC is in good operating condition, "GOOD" will be indicated.

If there exists any malfunctioning of the IC's. "BAD" will be indicated.
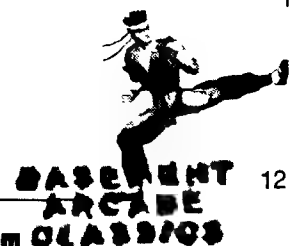
```
                        MEMORY TEST


                      * * * ROM * * *
    IC.   4   GOOD      IC.   5   GOOD      IC.   6   GOOD
    IC.   7   GOOD      IC.   8   GOOD      IC.   9   GOOD
    IC.  10   GOOD      IC.  11   GOOD      IC.  12   GOOD
    IC.  13   GOOD      IC.  14   GOOD      IC.  15   GOOD


                      * * * RAM * * *
    IC.  16   GOOD      IC.  17   GOOD      IC.  45   GOOD
    IC.  46   GOOD      IC.  47   GOOD      IC.  48   GOOD
    IC.  49   GOOD      IC.  50   GOOD      IC.  54   GOOD
    IC.  55   GOOD      IC.  57   GOOD      IC.  58   GOOD
    IC.  59   GOOD      IC.  65   GOOD      IC.  66   GOOD


                  PLEASE WAIT FOR A WHILE
```

Push the TEST button to have the menu return on to the screen.

2 INPUT TEST

This test displays the state of each switch. If the switch goes ON when activated it is satisfactory.

```
                        <INPUT TEST>

          PLAYER                    1P        2P
          UP            :           OFF       OFF
          DOWN          :           OFF       OFF
          RIGHT         :           OFF       OFF
          LEFT          :           OFF       OFF

          PUNCH         :           OFF       OFF
          KICK          :           OFF       OFF
          GUARD         :           OFF       OFF

          START         :           OFF       OFF

          COIN CHUTE 1  :           OFF
          COIN CHUTE 2  :           OFF
          SERVICE SW                OFF
          TEST SW                   OFF

          PUSH TEST BUTTON TO EXIT
```

```
PUNCH . . . . . . . . . . . . .SW1
KICK . . . . . . . . . . . . . .SW2
GUARD . . . . . . . . . . . .SW3 OR SW4
```

Push the TEST button to have the MENU return on to the screen.

3 SOUND TEST

This allows sound and background music used in the game to be tested.

1) Press the TEST button to have the following TEST menu appear on the screen.

```
SOUND TEST



        NO. 0 ADVERTISE







                .



        SELECT BY PLAYER 1 SIDE LEVER UP, DOWN
     PUSH PLAYER-1 SIDE PUNCH BUTTON TO MAKE SOUND
              PUSH TEST BUTTON TO EXIT
```
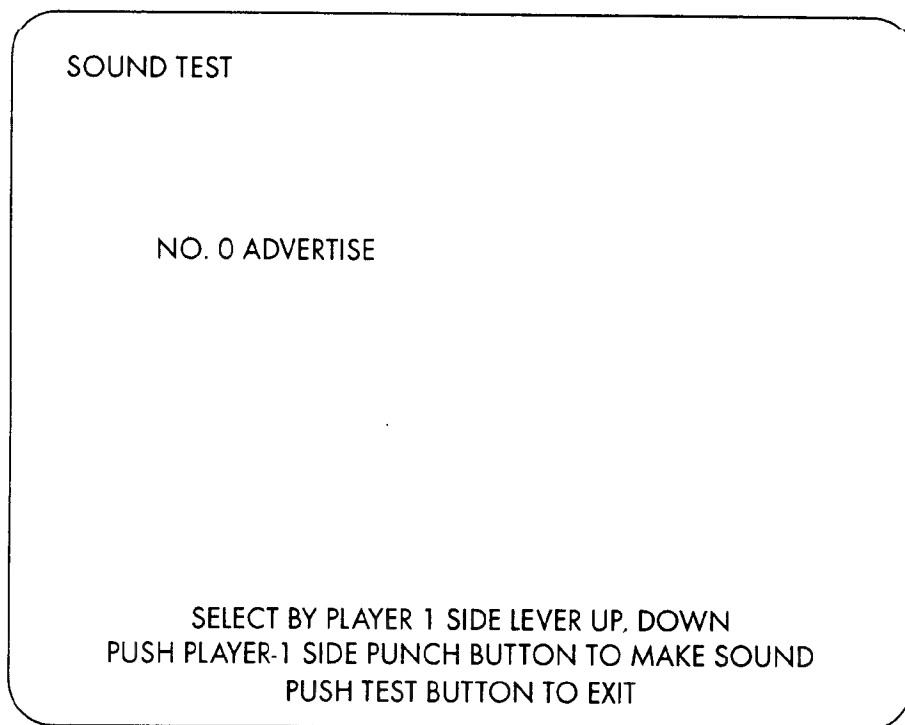
2) By moving the 1P side Lever upward and downward, choose the desired sound or background music. Press the 1P side Punch button to cause the music to be played.

3) Push the TEST button to have the MENU return on to the screen.

4 DISPLAY TEST

I. RGB COLOR ADJUSTMENT SCREEN

This page allows for performing the monitor color check and the BIAS and GAIN settings

```
                        DISPLAY TEST 1/2

                    ┌──────────────────────────┐
                    │                          │
                    │           RED            │
                    │                          │
                    ├──────────────────────────┤
                    │                          │
                    │          GREEN           │
                    │                          │
                    ├──────────────────────────┤
                    │                          │
                    │           BLUE           │
                    │                          │
                    ├──────────────────────────┤
                    │                          │
                    │          WHITE           │
                    │                          │
                    └──────────────────────────┘

          COLOR        BIAS      GAIN       SCROLL: 31
          RED          64        37
          GREEN        64        37
          BLUE         64        37
      →   EXIT


              SELECT: 1P LEVER UP/DOWN
       BIAS SET: 1P PUNCH/KICK GAIN SET: 2P PUNCH/KICK
```

Each of the R (red), G (green) and B (blue) colors is darkest at the left-hand end and becomes brighter in 16 gradations towards the right-hand end. The monitor brightness is satisfactory if the white color bar is black at the left-hand end and white at the right-hand end. For BIAS and GAIN adjustments, first bring the arrow "→" to the desired color by using the 1P side Lever, and press the 1P side PUNCH/KICK buttons for BIAS and press the 2P side PUNCH/KICK BUTTONS for GAIN.
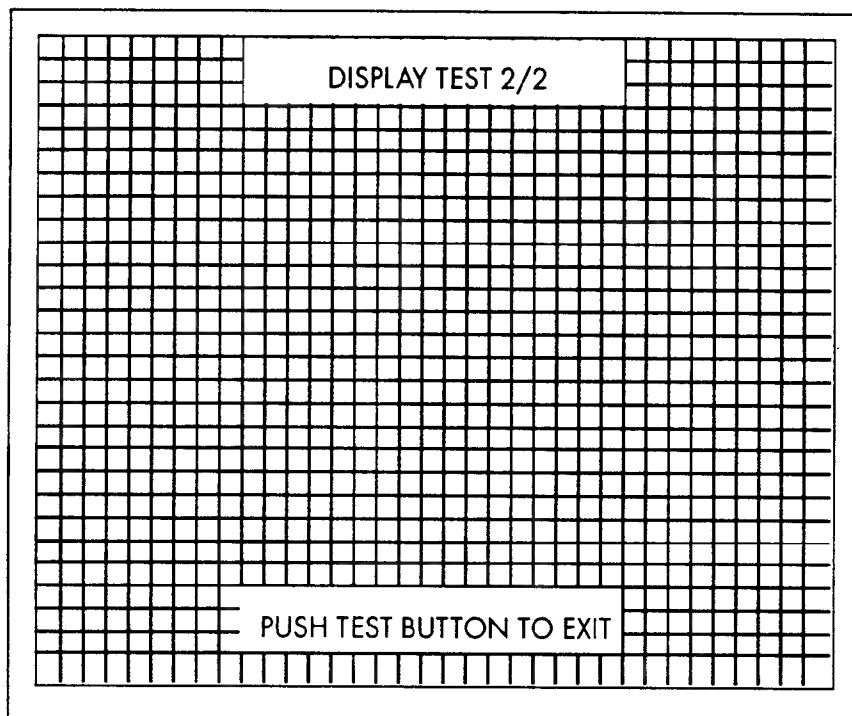
Normally, there is no need to make adjustments.

Pressing the TEST button causes the screen to proceed to the next page.

II. MONITOR SIZE ADJUSTMENT SCREEN

This page allows the monitor size to be checked.

```
                    DISPLAY TEST 2/2




              PUSH TEST BUTTON TO EXIT
```

Make adjustments in a manner so that the checkered portions for checking do not go beyond the screen.

Press the TEST button to have the menu return on to the screen.

5 GAME ASSIGNMENT

Allows game difficulty adjustments setting to be changed.

SELECTION OF DESIRED ITEM

1) Press the SERVICE button to move the "→" and bring it to the desired item.

2) Press the TEST button to change the setting.

3) After the desired setting is finished, bring the "→" to "EXIT" and press the TEST button.

```
          GAME ASSIGNMENTS
  →    MATCH COUNT (1P)        2                        A
       MATCH COUNT (VS)        2                        B
       DIFFICULTY              NORMAL                   C
                               ENERGY MAX (1P) :160
                               ENERGY MAX (VS) :200
                               STAGE WIDTH:1400

       ADVERTISE SOUND         ON                       D
       CONTINUE                ON                       E
       DRANK                   OK                       F
       COUNTRY                 JAPAN                    G
       DISPLAY TYPE            PROJECTOR                H
       VS FINISH               OFF                      I
       RANK MODE               OFF                      J
       INITIALIZE                                       K
       EXIT


       SELECT BY SERVICE BUTTON
         AND PUSH TEST BUTTON
```

(A) MATCH COUNT (1P)
This sets the first to win how many points a match to be a winner in the case of 1P play. The setting from 2 to 5 points is possible. As a standard, it is set to 2.

(B) MATCH COUNT (PLAYER VS. PLAYER)
This sets the first to win how many points a match to be a winner in the case of Player vs. Player play. The setting from 2 to 5 points is possible. As a standard, it is set to 2.

(C) DIFFICULTY
Sets the game's overall difficulty (EASY~HARDEST; set to "NORMAL" in the standard setting.)

(D) ADVERTISE SOUND
Determines whether ADVERTISE SOUND is to be emitted or not (set to ON in the standard setting).

(E) DRANK
"DRANK" is set to NG as a standard. If you allow SHUN (sulken character) to drink, set to OK.

(F) CONTINUE
This sets CONTINUE play YES or NO. Set to ON for yes, and OFF for no. As a standard, it is set to ON.

(G) COUNTRY
   Message language (select USA for the US, and EXPORT for other countries)

(H) DISPLAY TYPE
   Set to either of PROJECTOR or C.R.T. whichever suits the type of the cabinet.

(I) VS FINISH
   If this is set to ON, the game is over for both players.

(J) RANK MODE
   When using the RANK MODE, Set to ON.

(K) INITIAL
   Initializes all of the GAME ASSIGNMENT settings.

6 COIN ASSIGNMENTS

In this mode, the COIN/CREDIT setting, etc. can be changed.

SELECTION OF SETTING ITEM DESIRED:

1) Press the SERVICE button to choose the setting item. The red characters indicate the presently selected item.

2) Press the TEST button to cause the setting to change.

3) To effectuate the above change, cause EXIT to be displayed in red by using the SERVICE button, and then press the TEST button.

```
                    COIN ASSIGNMENT

        COIN CHUTE TYPE          COMMON        A
        CREDIT TO START          2 CREDITS     B
        CREDIT TO CONTINUE       2 CREDITS

        COIN/CREDIT SETTING      #1            C
        COIN CHUTE #1   1 COIN   1 CREDIT
        COIN CHUTE #2   1 COIN   1 CREDIT

        MANUAL SETTING                         D
        EXIT

                SELECT BY SERVICE BUTTON
                AND PUSH TEST BUTTON
```

(A) COIN CHUTE TYPE
Set to either of the following as applicable.
   COMMON: 1 COIN CHUTE TYPE
   INDIVIDUAL : 2 COIN CHUTE TYPE

(B) CREDIT TO START, CREDIT TO CONTINUE
Sets the credits required for starting the game and the credits required for continuing.
   CREDIT TO START can be set to 1~5
   CREDIT TO CONTINUE can be set to 1~5.
The settings can be made within a total of 15 patterns.

(C) COIN/CREDIT SETTING
Sets the CREDIT increase increment per coin insertion. There are 26 settings from #1 to #26, expressed in OO CREDIT as against OO COINS inserted.

#26 refers to FREE PLAY (SETTING #1 in the standard setting).

For details, refer to Table 1~2

(D) MANUAL SETTING
The CREDIT'S incremental increase settings as against a coin insertion are shown in further details than in (C) . . . for details, refer to Table 3. Also, note that when this MANUAL SETTING is performed, the COIN/CREDIT setting becomes ineffective.

TABLE 1 : COIN/CREDIT SETTING

NAME OF SETTING	COIN	CHUTE 1	COIN	CHUTE 2
SETTING #1	1 COIN	1 CREDIT	1 COIN	1 CREDIT
SETTING #2	1 COIN	1 CREDIT	1 COIN	2 CREDITS
SETTING #3	1 COIN	1 CREDIT	1 COIN	3 CREDITS
SETTING #4	1 COIN	1 CREDIT	1 COIN	4 CREDITS
SETTING #5	1 COIN	1 CREDIT	1 COIN	5 CREDITS
SETTING #6	1 COIN	2 CREDITS	1 COIN	2 CREDITS
SETTING #7	1 COIN	2 CREDITS	1 COIN	5 CREDITS
SETTING #8	1 COIN	3 CREDITS	1 COIN	3 CREDITS
SETTING #9	1 COIN	4 CREDITS	1 COIN	4 CREDITS
SETTING #10	1 COIN	5 CREDITS	1 COIN	5CREDITS
SETTING #11	1 COIN	6 CREDITS	1 COIN	6 CREDITS
SETTING #12	2 COINS	1 CREDIT	2 COINS	1 CREDIT
SETTING #13	2 COINS	1 CREDIT	1 COIN	1 CREDIT
SETTING #14	2 COINS	1 CREDIT	1 COIN	2 CREDITS
SETTING #15	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	3 CREDITS	2 COINS	3 CREDITS
SETTING #16	1 COIN	1 CREDIT	1 COIN	3 CREDITS
	2 COINS	3 CREDITS		
SETTING #17	3 COINS	1 CREDIT	3 COINS	3 CREDITS
SETTING #18	4 COINS	1 CREDIT	4 COINS	1 CREDIT
SETTING #19	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	5 CREDITS	4 COINS	5 CREDITS
SETTING #20	1 COIN	1 CREDIT	1 COIN	5 CREDITS
	2 COINS	2 CREDITS		
	3 COINS	3 CREDITS		
	4 COINS	5 CREDITS		

TABLE 2 : COIN/CREDIT SETTING

NAME OF SETTING	COIN	CHUTE 1	COIN	CHUTE 2
SETTING #21	3 COINS	1 CREDIT	1 COIN	2 CREDITS
	5 COINS	2 CREDITS		
SETTING #22	2 COINS	1 CREDIT	2 COINS	1 CREDIT
	4 COINS	2 CREDITS	4 COINS	2 CREDITS
	5 COINS	3 CREDITS	5 COINS	3 CREDITS
SETTING #23	2 COINS	1 CREDIT	1 COIN	3 CREDITS
	4 COINS	2 CREDITS		
	5 COINS	3 CREDITS		
SETTING #24	1 COIN	1 CREDIT	1 COIN	1 CREDIT
	2 COINS	2 CREDITS	2 COINS	2 CREDITS
	3 COINS	3 CREDITS	3 COINS	3 CREDITS
	4 COINS	4 CREDITS	4 COINS	4 CREDITS
	5 COINS	6 CREDITS	5 COINS	6 CREDITS
SETTING #25	1 COIN	1 CREDIT	1 COIN	6 CREDITS
	2 COINS	2 CREDITS		
	3 COINS	3 CREDITS		
	4 COINS	4 CREDITS		
	5 COINS	6 CREDITS		
SETTING #26	FREE PLAY		FREE PLAY	

TABLE 3 : MANUAL SETTING

COIN TO CREDIT	1 COIN	1 CREDIT
	2 COINS	1 CREDIT
	3 COINS	1 CREDIT
	4 COINS	1 CREDIT
	5 COINS	1 CREDIT
	6 COINS	1 CREDIT
	7 COINS	1 CREDIT
	8 COINS	1 CREDIT
	9 COINS	1 CREDIT

BONUS ADDER	NO BONUS ADDER
	2 COINS GIVE 1 EXTRA COIN
	3 COINS GIVE 1 EXTRA COIN
	4 COINS GIVE 1 EXTRA COIN
	5 COINS GIVE 1 EXTRA COIN
	6 COINS GIVE 1 EXTRA COIN
	7 COINS GIVE 1 EXTRA COIN
	8 COINS GIVE 1 EXTRA COIN
	9 COINS GIVE 1 EXTRA COIN

COIN CHUTE #1 MULTIPLIER	1 COIN COUNTS AS 1 COIN
	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

COIN CHUTE #2	1 COIN COUNTS AS 1 COIN
MULTIPLIER	1 COIN COUNTS AS 2 COINS
	1 COIN COUNTS AS 3 COINS
	1 COIN COUNTS AS 4 COINS
	1 COIN COUNTS AS 5 COINS
	1 COIN COUNTS AS 6 COINS
	1 COIN COUNTS AS 7 COINS
	1 COIN COUNTS AS 8 COINS
	1 COIN COUNTS AS 9 COINS

EXAMPLES FOR THE CALCULATION OF CREDITS SET IN THE "MANUAL" SETTING

Example 1

COIN TO CREDIT . . . . .4 COINS 1 CREDIT
BONUS ADDER . . . . .2 COINS GIVE 1 EXTRA COIN
COIN CHUTE MULTIPLIER
. . . . .1 COIN COUNTS AS 2 COINS

In the above setting , when 7 coins are inserted in the 1P COIN CHUTE, the number of 1P credits will be as follows:

1) As per the COIN CHUTE MULTIPLIER setting, since 1 coin inserted counts as 2 coins, 7 coins inserted will be equivalent to 14 coins.

2) According to the BONUS ADDER setting, every 2 coins earn one service coin, therefore, the equivalent of 14 coins will have 7 service coins added, resulting in the equivalent of 21 coins.

3) According to the COIN TO CREDIT setting, 4 coins make 1 credit, therefore, the equivalent of 21 coins makes 5 and a quarter credits.

Example 2

COIN TO CREDIT . . . . .6 COINS 1 CREDIT
BONUS ADDER . . . . .3 COINS GIVE 1 EXTRA COIN
COIN CHUTE #1 MULTIPLIER
. . . . .1 COIN COUNTS AS 4 COINS
COIN CHUTE #2 MULTIPLIER
. . . . .1 COIN CHUTE COUNTS AS 5 COINS

In the above settings, when 3 coins are inserted into COIN CHUTE #1 and 5 coins into COIN CHUTE #2, the number of CREDITS will be as follows:

1) According to COIN CHUTE #1 MULTIPLIER setting, one coin inserted counts as four coins, therefore, 3 coins are equivalent to 12 coins.

2) According to the COIN CHUTE #2 MULTIPLIER setting, one coin inserted counts as 5 coins, therefore, 5 coins inserted into COIN CHUTE #2 will be equivalent to 25 coins.

3) The total number of coins in COIN CHUTE #1 and #2 will be equivalent to 37 coins.

4) According to BONUS ADDER setting, every 3 coins will earn one service coin, therefore, the equivalent of 37 coins with 12 service coins will be equivalent to 49 coins.

5) According to COIN TO CREDIT setting, 6 coins make 1 CREDIT, therefore, the equivalent of 49 coins equals 8 and one sixth CREDITS.

7 BOOKKEEPING

This test mode allows each of the CREDIT/TIME/GAME data to be ascertained.
1. GLOBAL DATA DISPLAY

BOOKKEEPING 1/5		
GLOBAL DATA 1		
COIN CHUTE #1	00	A
COIN CHUTE #2	00	B
TOTAL COINS	00	C
COIN CREDITS	00	D
SERVICE CREDITS	00	E
TOTAL CREDITS	00	F
TOTAL TIME	00D 00H 00M 00S	G
PLAY TIME	00D 00H 00M 000S	H
PLAY TIME RATIO (*1000)	00	I
TOTAL GAME COUNT	0	J
1P	0	K
VS	0	L
1P GAME TIME A	0D 0H 0M 0S	M
WAIT GAME TIME A	0D 0H 0M 0S	N
VS GAME TIME A	0D 0H 0M 0S	O
TOTAL AVERAGE TIME A	0M 0S	P
1P	0M 0S	Q
VS	0M 0S	R
PUSH SERVICE BUTTON TO CONTINUE		
PUSH TEST BUTTON TO EXIT		

(A)   COIN CHUTE #1
       Displays the number of coins inserted in COIN CHUTE #1

(B)   COIN CHUTE #2
       Displays the number of coins inserted in COIN CHUTE #2

(C)   TOTAL COIN
       Total number of times both the COIN CHUTES are actuated

(D)   COIN CREDIT
       Number of CREDITS registered by COIN insertion only.

(E)   SERVICE CREDIT
       The SERVICE SWITCH usage frequency.

(F)   TOTAL CREDIT
       Total number of CREDITS

(G)   TOTAL TIME
       Machine's total actuated time (excluding the test performance time)

(H)   PLAY TIME
       Display game play time.

(I)   PLAY TIME RATIO
       Displays the ratio of play time as against the total POWER-ON time.

(J)   TOTAL GAME COUNT
       Total game play frequency. (K) + (L)

(K)   1P GAME COUNT
       Displays the 1P (against CPU) play frequency.

(L)   VS GAME COUNT
       Displays player vs. player play frequency.

(M)   1P GAME TIME A
       Displays the 1P play's total time.

(N)   WAIT GAME TIME A
       Total game time excluding buy-in vs play time.

(O)   VS GAME TIME A
       Displays the total vs play time.

(P)   TOTAL AVERAGE TIME
       Average game play time ((M) + (O) * 2)/(J)

(Q)   1P AVERAGE TIME
       Displays the 1P play average time. (M)/(K)

(R)   VS AVERAGE TIME
       Displays the 2P (player vs. player) play average time. (O)/(L)

Press the SERVICE button to proceed to the next page.
Press the TEST button to have the MENU return on to the screen.

2. GLOBAL DATA B DISPLAY

BOOKKEEPING 2/5

```
                    BOOKKEEPING 2/5

                     GLOBAL DATA 2
                     -TYPE-B DATA-
                     START              CONTINUE
1P PLAY COUNT        0                  0                    S
VS PLAY COUNT        0                  0
1P AVG. PLAY TIME    OM OS              OM OS                T
VS. AVG. PLAY TIME   OM OS              OM OS
TIME
-1P START-  -VS START-  -1P CONTINUE-  -VS CONTINUE-         U
0~30S


~1M
~1M30S
10M~

             PUSH SERVICE BUTTON TO CONTINUE
                PUSH TEST BUTTON TO EXIT
```

(S)   1P PLAY COUNT VS PLAY COUNT
      Displays 1P and VS games' play frequencies.

(T)   1P AVG. PLAY TIME VS AVG. PLAY TIME
      Displays 1P play average time and vs. play average time.

(U)   "By play time" play frequency for 1P and vs. game.

NOTE: The above 1P play time includes buy-in vs play time.

3. 1P GAME DATA DISPLAY

BOOKKEEPING 3/5

1P GAME DATA

GAME COUNT				O	V	
TOTAL TIME	OD OH OM OS				W	
AVG TIME				OM OS	X	
MIN TIME				OM OS	Y	
MAX TIME				OM OS	Z	
CONTINUE COUNT				O	a	
SET COUNT				O	b	
DRAW COUNT				O	c	
WIN BY K.O. COUNT				O	d	
WIN BY RING OUT COUNT				O	e	
WIN BY JUDGE COUNT				O	f	

	---COUNT---		---TIME---		g
ROUND	TOTAL	WIN	TOTAL	AVG.	WIN RATE
(TH)	(TIMES)	(TIMES)	(SEC)	(SEC)	(*1000)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					

PUSH SERVICE BUTTON TO CONTINUE
PUSH TEST BUTTON TO EXIT

(V) GAME COUNT
Displays 1P play frequencies.

(W) TOTAL TIME
Displays the total play time (1P side)

(X) AVG TIME
Displays the average play time (1P side)

(Y) MIN TIME
Displays the minimum play time (1P side)

(Z) MAX TIME
Displays the maximum play time (1P side)

(a) CONTINUE COUNT
Displays the CONTINUE play ratio (1P side)

(b) SET COUNT
Displays the Total 1P game set

(c) DRAW COUNT
Displays 1P plays' draw frequency.

(d) WIN BY KO COUNT
Displays the ratio of winning by KNOCK OUT (1P side)

(e) WIN BY RINGOUT COUNT
Displays the ratio of winning by RING OUT (1P side)

(f) WIN BY JUDGE COUNT
Displays the ratio of win by a decision.

(g) Displays per round frequency, win frequency, total play time, average play time and win ratio in the 1P play.

Press the SERVICE button to turn the page.
Pressing the TEST button causes the MENU to return on to the screen.

4. VS GAME DATA DISPLAY

BOOKKEEPING 4/5				
VS GAME DATA				
GAME COUNT	0	GAME TIME	COUNT	h
TOTAL TIME	0D 0H 0M 0S	(SEC.)	(TIMES)	i
AVG. TIME	0M 0S	~10	0	j
MIN TIME	0M 0S	~13		k
MAX TIME	0M 0S	~16		l
CONTINUE COUNT	0			m
SET COUNT	0			n
DRAW COUNT	0			o
WIN BY K.O. COUNT	0			p
WIN BY RING OUT COUNT	0			q
WIN BY JUDGE COUNT	0			r
	~103			
	134~			
PUSH SERVICE BUTTON TO CONTINUE				
PUSH TEST BUTTON TO EXIT				

(h) GAME COUNT
Displays play frequencies in the case of Player vs. Player play.

(i) TOTAL TIME
Displays the total play time in the case of Player vs. Player play.

(j) AVG TIME
Displays the per player average play time in the case of Player vs. Player play.

(k) MIN TIME
Displays the minimum play time in the case of Player vs. Player play.

(l) MAX TIME
Displays the maximum play time in the case of Player vs. Player play.

(m) CONTINUE COUNT
Displays CONTINUED frequency in vs. plays.

(n) SET COUNT
Displays the total sets in vs. plays.

(o) DRAW COUNT
Displays draw frequency in vs. plays.

(p) WIN BY KO COUNT
Displays WIN frequency by KO in vs. plays.

(q) WIN BY RING OUT COUNT
Displays WIN frequency by RING OUT in vs plays.

(r) WIN BY JUDGE COUNT
Displays WIN frequency by decision in vs. plays.

The right-hand side portion of the screen displays "by play time" play frequency in one vs play.
This can be utilized as a standard for setting difficulty levels, etc.

Press the SERVICE button to turn the page.
Pressing the TEST button causes the MENU to return on to the screen.

5. VS GAME DATA DISPLAY

```
                         BOOKKEEPING 5/5
                         VS GAME DATA 2
                           VS DIAGRAM
                        MY CHAR. : AKIRA

   V.S. CHAR.      WIN        LOSE       0%     RATE.   100%
   AKIRA           0          0          .
   JACKY           0          0          .
   SARAH           0          0          .
   KAGE            0          0          .
   LAU             0          0          .
   JEFFRY          0          0          .
   PAI             0          0          .
   WOLF            0          0          .
   SHUN            0          0          .
   LION            0          0          .

           SELECT BY PLAYER 1 SIDE LEVER UP/DOWN
             PUSH SERVICE BUTTON TO CONTINUE
               PUSH TEST BUTTON TO EXIT
```

Displays the win/loss frequencies and win rate (against each character) of the character selected as "MY CHAR.".

Press the SERVICE button to turn the page.
Pressing the TEST button causes the MENU to return on to the screen.

8. BACKUP DATA CLEAR

Clear the contents of BOOKKEEPING.

```
                BACKUP RAM CLEAR

             YES       (CLEAR)
         →   NO        (CANCEL)

          SELECT BY SERVICE BUTTON
           AND PUSH TEST BUTTON
```

When clearing, bring "→" to "YES" and when not clearing, to "NO", by using the SERVICE SW, and then push the TEST button.

When clearing has been finished, "COMPLETED" will be displayed.

Pressing the TEST button will have the MENU return on to the screen.

9. TGP TEST

In this test, the TGP (the on-screen display related IC) is checked. "GOOD" is displayed for normal ICs. "BAD" is displayed for abnormal ICs.

```
                TGP TEST

            ic 47 good good
            ic 56 good good
            ic 60 good good
            ic 64 good good
```

Five seconds after test is started, pressing the TEST button causes the MENU to return on to the screen.

10. ALL INITIALIZE

```
            ALL INITIALIZE

            YES   (INIT.)
         →  NO   (CANCEL)

        SELECT BY SERVICE BUTTON
        AND PUSH TEST BUTTON
```

In this test mode, all settings are initialized.
When initializing, bring the arrow "→" to "YES" and press the test button.

3. COMPOSITION OF GAME BOARD
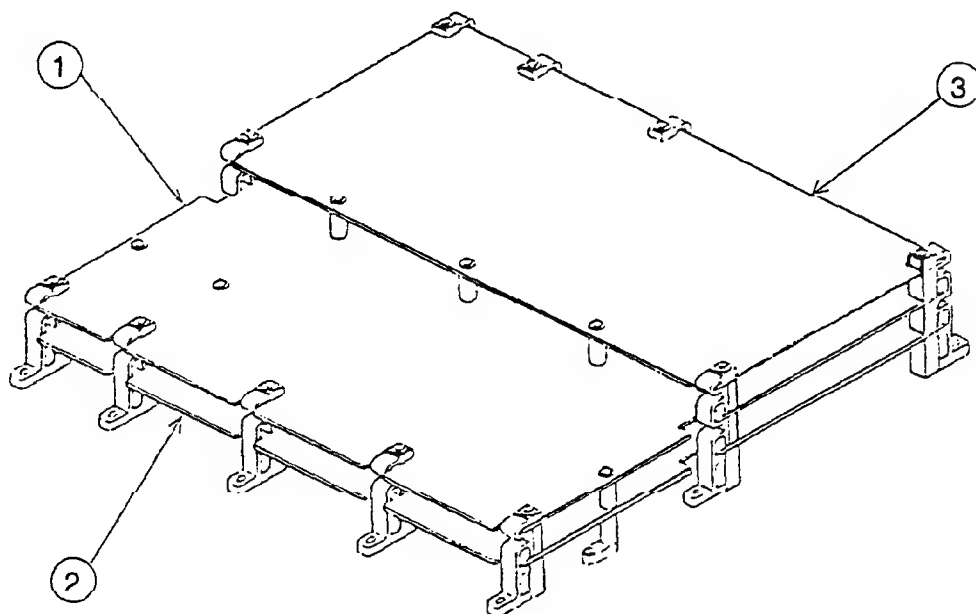
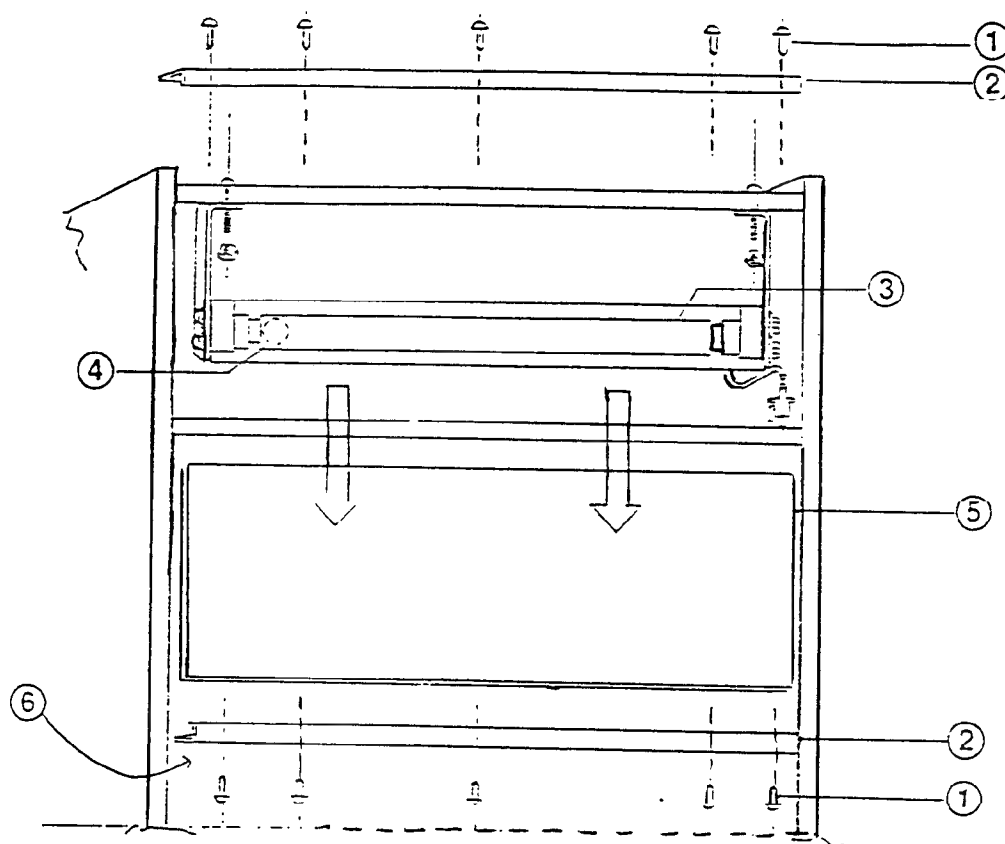| GAME BOARD No.	833-11341	GAME BD VIRTUA FIGHTER2
1 MAIN BD No.	837-10848	MODEL 2 A-CRX CPU BD COM
2 MAIN BD No.	837-10849-01	MODEL 2 A-CRX VIDEO BD COM
3 ROM BD No.	834-11342	ROM BD VIRTUA FIGHTER2

Shield Case Assembly
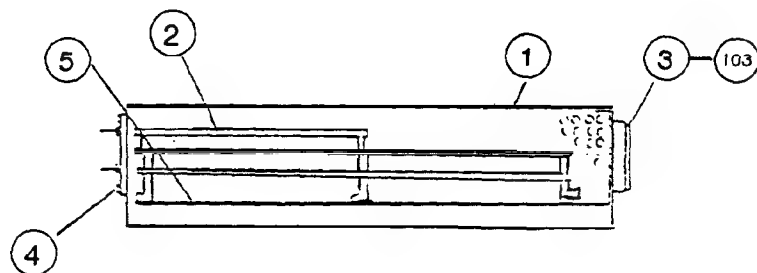
NO.	PART NO.	DESCRIPTION
1		CAGE COVER
2		CPU LOGIC PC
3		12VDC FAN (92MM, 40 CFM MIN.)
4		FILTER BOARD
5		CAGE BASE
103		FAN GUARD

Fluorescent Lamp (VF)

NO.	PART NO.	DESCRIPTION
1	0005-231-211	#8 X 1/8" BLACK PAN HEAD SCREW
2	0065-037-002	HEADER RETAINER BRACKET
3	COMMONLY AVAILABLE	24" FLUORESCENT LAMP (F20 T 12/CW)
4	COMMONLY AVAILABLE	STARTER (FS-2 20W)
5	999-0353	HEADER MARQUEE GLASS
6	999-0358	MONITOR GLASS

Control Panel (VF)
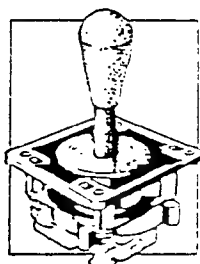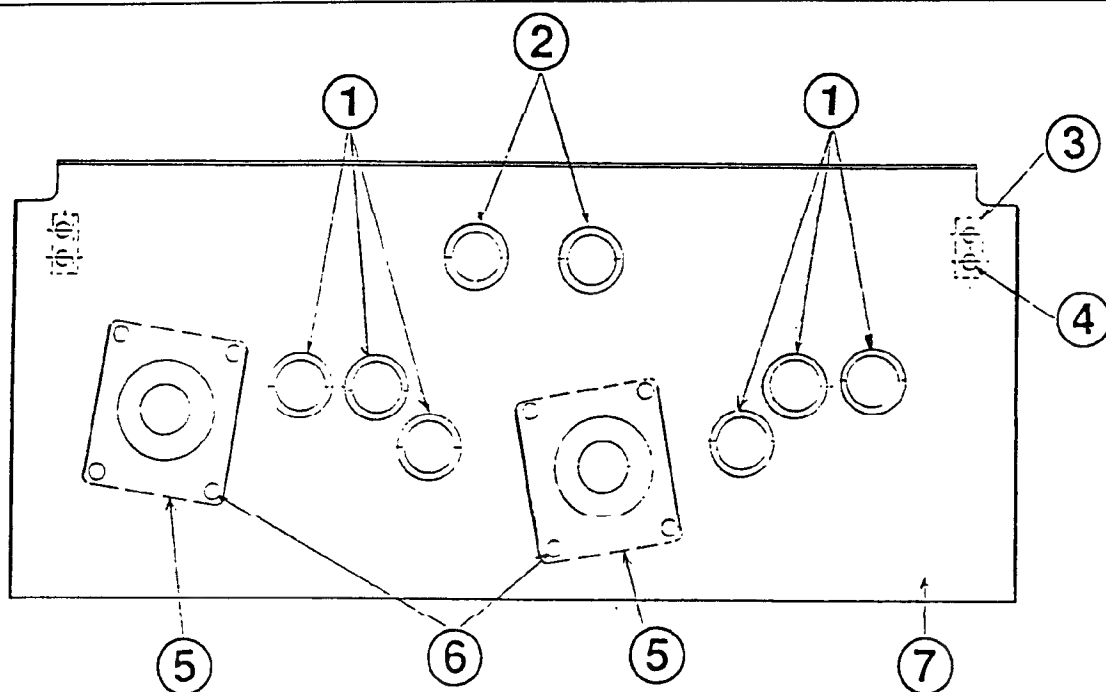
Typical Joystick
Assembly

Typical Switch
Assembly
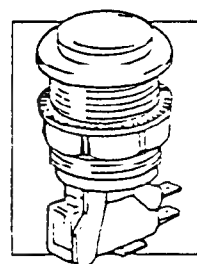
NO.	PART NO.	DESCRIPTION
1	999-0212	PUSH BUTTON ASSEMBLY (RED)
2	999-0213	START PUSH BUTTON ASSEMBLY (WHITE)
3	0069-006-000	STRIKE BRACKET (2)
4	0007-183-211	CARRIAGE BOLT (4)
5	999-0214	JOYSTICK ASSEMBLY (2)
6	0007-001-111	CARRIAGE BOLT (8)
7	999-0356	LEXAN OVERLAY

Switch Bracket Assembly
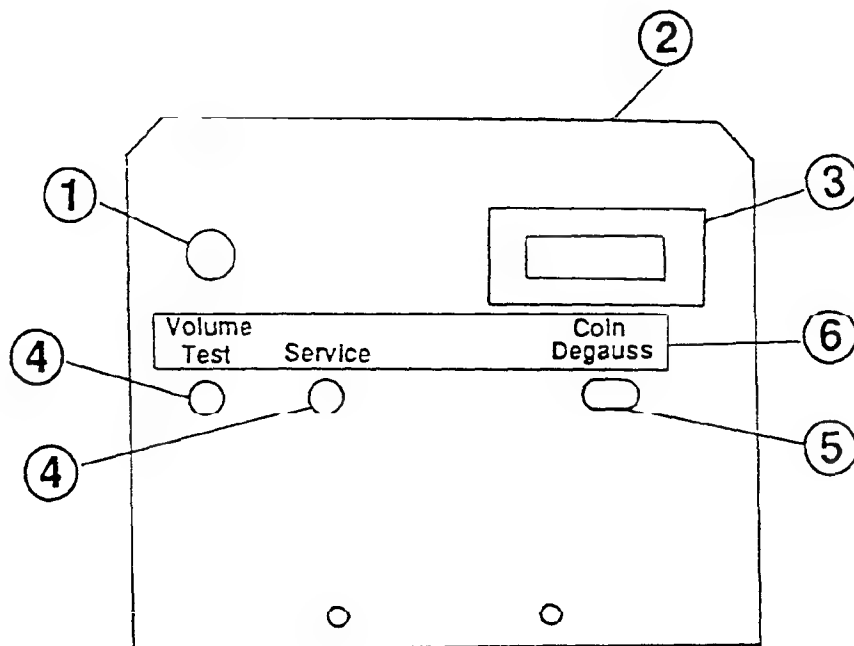
NO.	PART NO.	DESCRIPTION
1		5K VOLUME POT
2		BRACKET
3		COIN METER (6VDC, NO DIODE, NO LIGHT)
4		PUSH BUTTON SWITCH
5		3A PUSH BUTTON SWITCH
6		LABEL

Sound Board
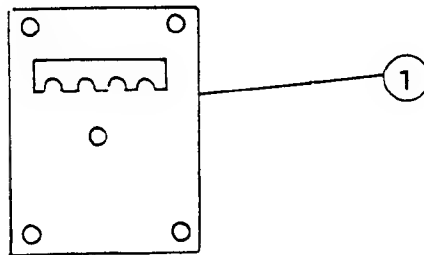
NO.	PART NO.	DESCRIPTION
1	838-10018	AUDIO AMP PC

Bill Board Assy

Bill Board
(PN 999-0359)

8 X 5/8 SL HW SCR. (6)
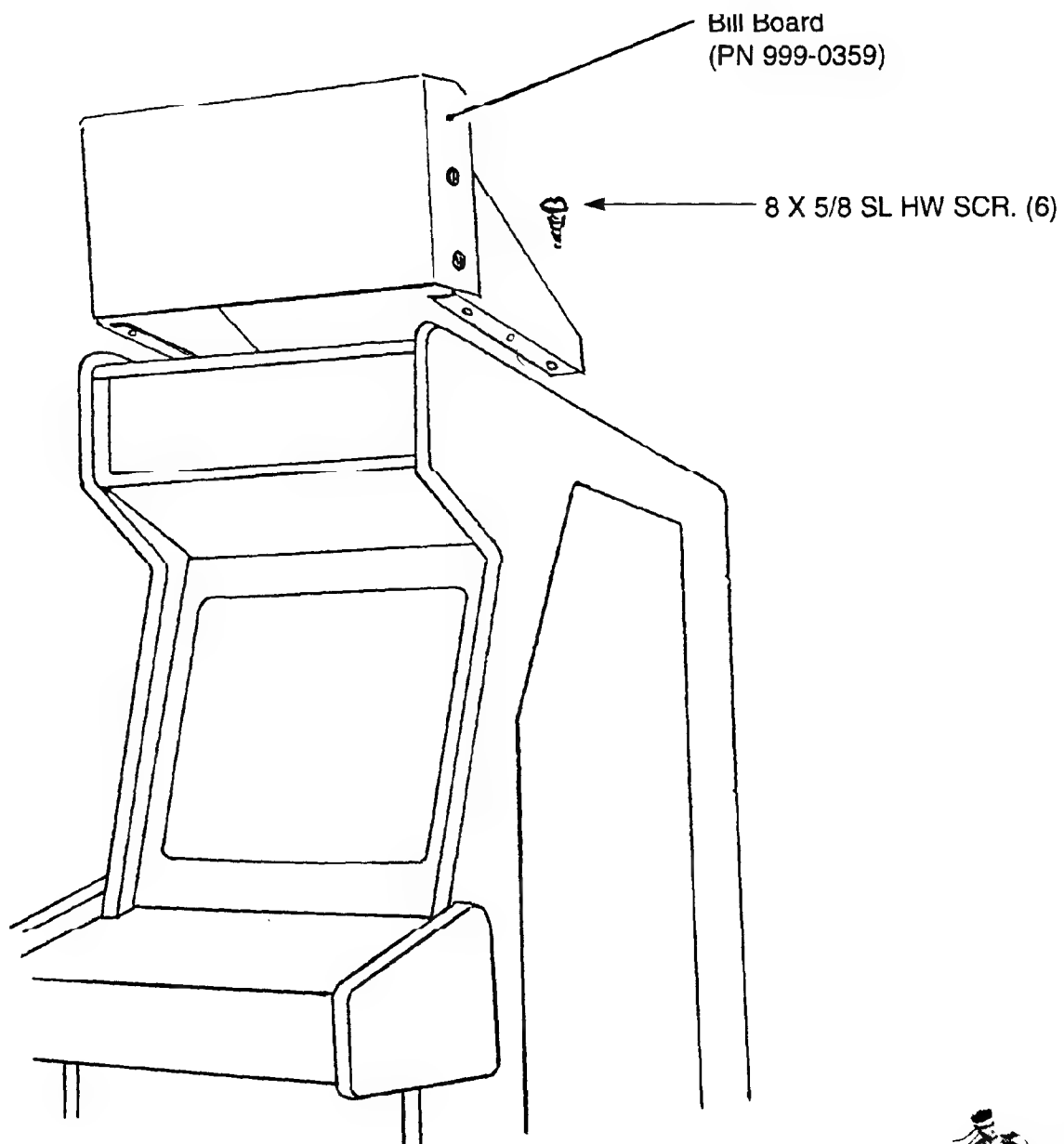
Power Unit Assembly
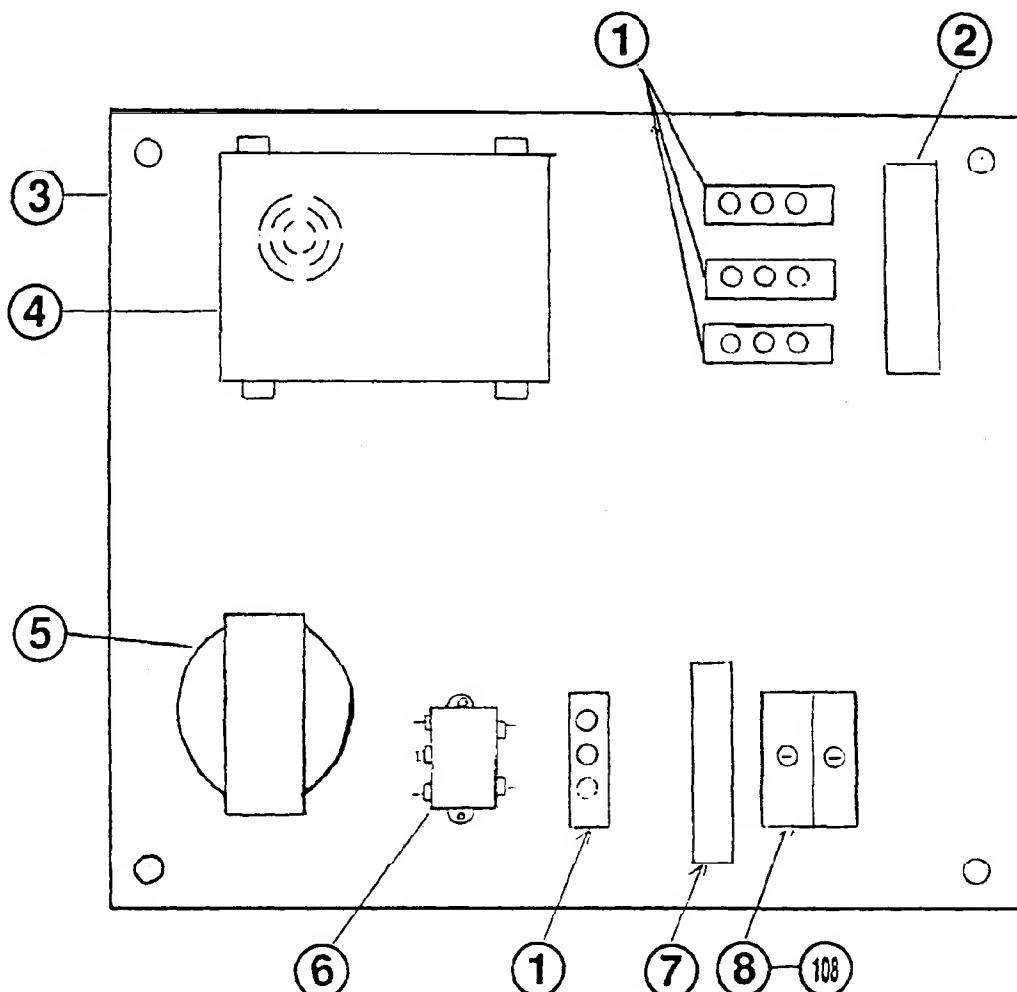
NO.	PART NO.	DESCRIPTION
1		COMMUTATION BRACKET (4)
2		LABEL
3		WOOD BASE
4	999-0102	150W POWER SUPPLY
5	999-0205	TRANSFORMER 437P30A
	999-0357	TRANSFORMER 437P41 ALTERNATE
6		LINE FILTER
7		FUSE LABEL
8		FUSE HOLDER
108		FUSE 5A

Wire Color Code Table

The Wire Color Code is as follows:

A	Pink
B	Sky Blue
C	Brown
D	Purple
E	Light Green

Wires other than those of any of the above 5 single colors will be displayed by 2 alphanumeric characters:

1	Red
2	Blue
3	Yellow
4	Green
5	White
7	Orange
8	Black
9	Gray

If the right-hand side numeral of the code is 0, then the wire will be of a single color shown by the left-hand side numeral (see list above).

If the right-hand side alphanumeric is not 0, that particular wire has a spiral color code. The left-hand side character shows the base color and the right-hand side one shows the spiral color.
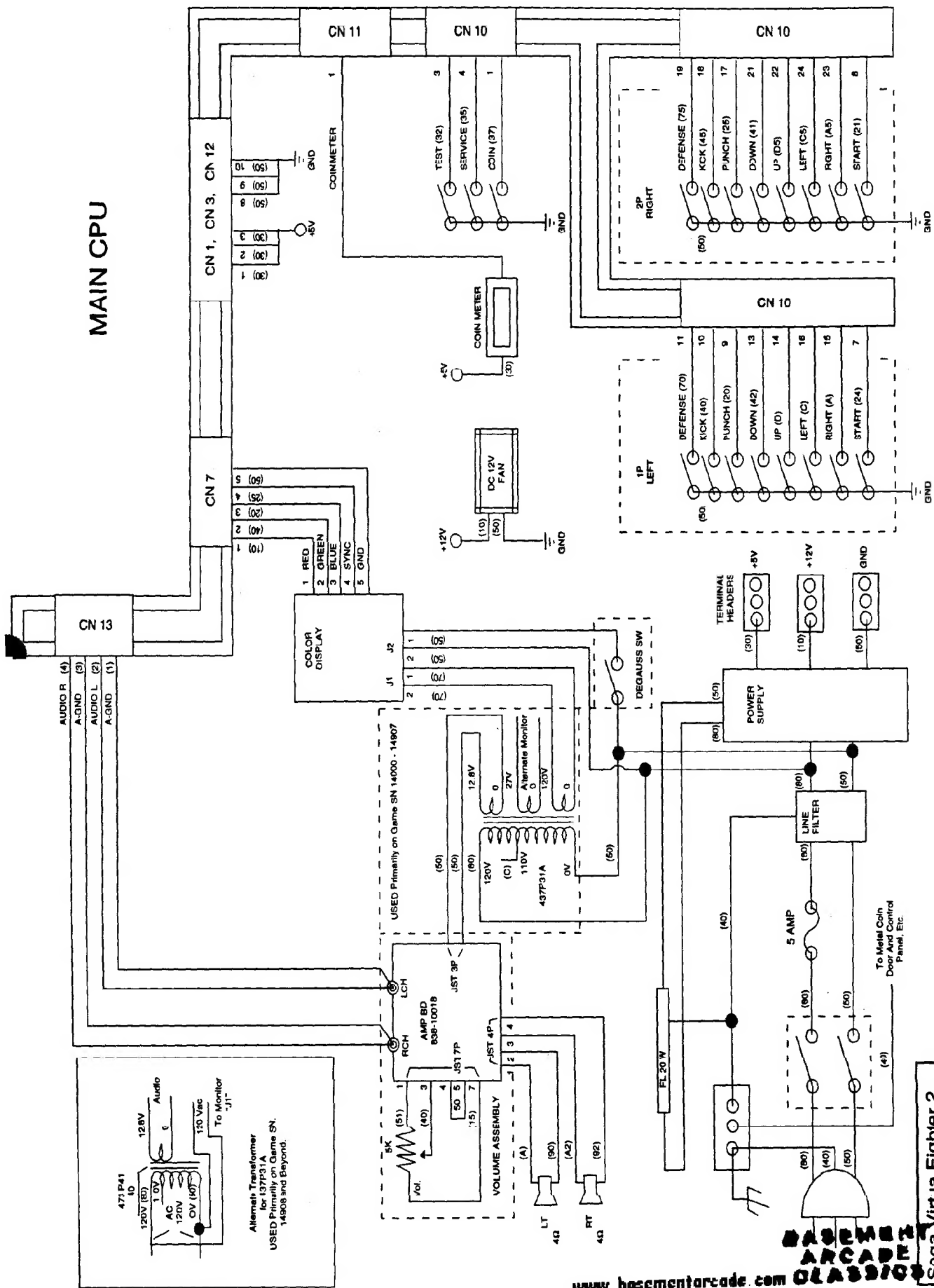
Example — '51' = WHITE/RED
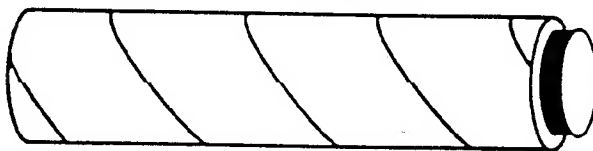
RED   WHITE

The character following the wire color code indicates the size of the wire:

K	A W G 18	U L 1015
L	A W G 20	U L 100/
None	A W G 22	U L 1007

Sega Virtua Fighter 2
UPRIGHT Game Wiring

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